

NEB-241-PCT.ST25.txt  
SEQUENCE LISTING

<110> New England Biolabs, Inc.  
Morgan, Richard  
Wilson, Geoffrey  
Lunnen, Keith  
Heiter, Daniel  
Benner, Jack  
Nfenfou, Celine  
Picone, Stephen

<120> A Novel Modular Type II Restriction Endonuclease, CspCI, and the  
Use of Modular Endonucleases for Generating Endonucleases with  
New Specificities

<130> NEB-241-PCT

<150> 60/555,796  
<151> 2004-03-24

<160> 49

<170> PatentIn version 3.2

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 35 40 45

Asn Ala Lys Gly Asn Ile Gly Tyr Pro Glu Phe Ile Ile Ser Asn Arg  
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Lys Asp Thr Ala Phe Leu Ile Val Val Glu Cys Lys Pro Asp Val Lys  
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Lys His Glu Ser Pro Ser Arg Asp Lys Pro Val Asp Tyr Ala Val Asp  
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Gly Val Leu His Tyr Ala Arg His Leu Ala Lys His Tyr Thr Val Leu  
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Ala Val Ala Val Ser Gly Thr Thr Ala Ser Ser Met Lys Val Ser Asn  
 115 120 125

Phe Leu Val Pro Ala Gly Thr Thr Asp Val Lys Ala Leu Val Asn Glu  
 130 135 140

Ser Asn Ser Ser Val Ala Glu Leu Val Pro Tyr Asp Asp Tyr Tyr Arg  
 145 150 155 160

Leu Ala Ser Tyr Asp Pro Asp Val Ala Gln Lys Arg His Ser Asp Leu  
 165 170 175

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Ala Ser Ile Pro Gln Ala Lys Lys Asp Thr Met Leu Gln Pro Tyr Thr  
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Thr Ile Ala Val Asn Pro Asn Leu Gly Lys Pro Asp Ser Lys Thr Ala  
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Lys Glu Tyr Pro Asp Gly Val Phe Lys Glu Ile Ile Thr Arg Ile Ala  
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Asp Asn Val Trp Pro Tyr Ile Asn Val Phe His Asp Phe Asp Val Val  
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Ala Leu Gly Ile Val Leu Thr Pro Arg His Val Ala Glu Leu Phe Ser  
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Leu Ile Ala Asn Val Asn Pro Lys Ser Lys Val Leu Asp Ile Cys Ala  
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Ala Val Thr Asp Lys Glu Arg Asn Asp Ile Lys Gln Asn Arg Leu Ile  
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Gly Ile Glu Asn Asn Pro Lys Met Phe Ala Leu Ala Ala Ser Asn Met  
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Ile Leu Arg Gly Asp Gly Lys Ala Asn Leu His Gln Ala Ser Cys Phe  
 405 410 415

Asp Asn Ala Val Ile Ala Ala Val Gln Lys Met Lys Pro Asn Val Gly  
 420 425 430

Met Leu Asn Pro Pro Tyr Ser Gln Ser Lys Ser Asp Ala Glu Leu His  
 Page 8



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435

440

445

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Val Gly Ile Ala Ile Val Pro Met Ser Ser Ala Ile Ser Pro Asn Pro  
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Met Pro Gln Glu Leu Phe Tyr Pro Val Gly Thr Val Thr Cys Val Met  
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Val Trp Ile Ala Gly Val Pro His Glu Gln Met Ser Lys Lys Thr Trp  
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Phe Gly Tyr Trp Arg Asp Asp Gly Phe Val Lys Thr Lys His Lys Gly  
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Arg Ile Asp Met Asn Gly Thr Trp Pro Asp Ile Arg Asp Arg Trp Ile  
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Glu Met Tyr Arg Asn Arg Glu Val His Ala Gly Glu Ser Ile Met Gln  
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Lys Val Gly Pro Asp Asp Glu Trp Cys Ala Glu Ala Tyr Met Glu Thr  
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Asp Tyr Ser Val Leu Thr Gln Ser Asp Phe Glu Lys Val Val Gln Ser  
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<400> 17

NEB-241-PCT.ST25.txt

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<211> 43  
<212> DNA  
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<220>  
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<400> 18  
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<210> 20  
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<211> 43  
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agtgccacct gacgtgcaac ctaggtggca cgtctaagaa acc 43

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<220>  
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<400> 22  
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NEB-241-PCT.ST25.txt

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18

<210> 24  
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<220>  
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<400> 24

Val Leu Asp Ile Cys Ala Gly Thr Gly Gly Phe  
1 5 10

<210> 25  
<211> 10  
<212> PRT  
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<220>  
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<400> 25

Ala Asn Glu Arg Lys Thr Glu Glu Leu Val  
1 5 10

<210> 26  
<211> 11  
<212> PRT  
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<220>  
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<400> 26

Met Ala Asn Glu Arg Lys Thr Glu Ser Leu Val  
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<210> 27  
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<212> PRT

NEB-241-PCT.ST25.txt

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&lt;220&gt;

&lt;223&gt; synthetic

&lt;400&gt; 27

Pro Lys Ile Asn Asp Leu Phe His Leu Glu  
1 5 10

&lt;210&gt; 28

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; unknown

&lt;220&gt;

&lt;223&gt; synthetic

&lt;400&gt; 28

Met Pro Lys Ile Asn Asp Leu Phe His Leu Glu  
1 5 10

&lt;210&gt; 29

&lt;211&gt; 12

&lt;212&gt; DNA

&lt;213&gt; unknown

&lt;220&gt;

&lt;223&gt; synthetic

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (5)..(8)

&lt;223&gt; n=a,c,t or g

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (9)..(9)

&lt;223&gt; n is a, c, g, or t

&lt;400&gt; 29

ccacnnnnnt tg

12

&lt;210&gt; 30

&lt;211&gt; 36

&lt;212&gt; DNA

&lt;213&gt; unknown

&lt;220&gt;

&lt;223&gt; synthetic

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(11)

&lt;223&gt; n=a,c,t or g

&lt;220&gt;

NEB-241-PCT.ST25.txt

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<220>  
<221> misc\_feature  
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36

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<212> DNA  
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<223> n=a,c,g or t

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<220>  
<221> misc\_feature  
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34

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<223> n=a,c,t or g

<220>  
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NEB-241-PCT.ST25.txt

&lt;223&gt; n=a,c,t or g

&lt;400&gt; 32

nnnnnnnnnn caannnnngt ggnnnnnnnn nnnnn

35

&lt;210&gt; 33

&lt;211&gt; 35

&lt;212&gt; DNA

&lt;213&gt; unknown

&lt;220&gt;

&lt;223&gt; synthetic

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(11)

&lt;223&gt; n=a,c,t or g

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (15)..(19)

&lt;223&gt; n=a,c,t or g

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (24)..(35)

&lt;223&gt; n=a,c,t or g

&lt;400&gt; 33

nnnnnnnnnn ncaannnnng tggnnnnnnnn nnnnn

35

&lt;210&gt; 34

&lt;211&gt; 13

&lt;212&gt; DNA

&lt;213&gt; unknown

&lt;220&gt;

&lt;223&gt; synthetic

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (4)..(9)

&lt;223&gt; n=a,c,t or g

&lt;400&gt; 34

caannnnngg tgg

13

&lt;210&gt; 35

&lt;211&gt; 11

&lt;212&gt; DNA

&lt;213&gt; unknown

&lt;220&gt;

&lt;223&gt; synthetic

&lt;220&gt;

&lt;221&gt; misc\_feature

NEB-241-PCT.ST25.txt

<222> (4)..(7)  
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caannnngtg g

11

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caannnnntt g

11

<210> 37  
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13

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<220>

NEB-241-PCT.ST25.txt

<221> misc\_feature  
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<400> 38  
caannnnngt gr

12

<210> 39  
<211> 11  
<212> DNA  
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caannnnngt g

11

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cgannnnntg c

11

<210> 41  
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<400> 41  
caannnnntg c

11

<210> 42

NEB-241-PCT.ST25.txt

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gcannnnngt gg

12

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<211> 12  
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<223> n=a,c,t or g

<400> 43  
cgannnnnt gc

12

<210> 44  
<211> 11  
<212> DNA  
<213> Bacillus sphaericus

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<222> (3)..(6)  
<223> n=a,c,t or g

<220>  
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<222> (10)..(10)  
<223> y=c or t

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acnnngtay c

11

<210> 45  
<211> 11  
<212> DNA  
<213> Bacillus pumilus

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NEB-241-PCT.ST25.txt

<400> 45  
gagnnnnnct c

11

<210> 46  
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<212> DNA  
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<223> n=a, c, t or g

<400> 46  
ccannnnnnng t

11

<210> 47  
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<213> Acinetobacter lwoffii

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<221> misc\_feature  
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<400> 47  
gaacnnnnnn tcc

13

<210> 48  
<211> 11  
<212> DNA  
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<222> (3)..(3)  
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<220>  
<221> misc\_feature  
<222> (4)..(8)  
<223> n=a,c,t or g

<220>  
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<222> (9)..(9)  
<223> r=a or g

<400> 48  
gaynnnnnrt c

11

<210> 49  
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<212> DNA  
<213> Bacillus stearothermophilus

NEB-241-PCT.ST25.txt

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<222> (3)..(7)  
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<400> 49  
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11